MONOGRAPH ON CARPET MAKING IN THE PUNJAB

1905—06

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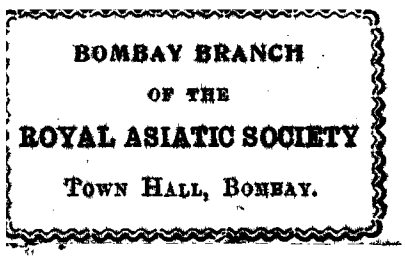
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MONOGRAPH

ON

CARPET MAKING

IN THE PUNJAB.

~~1900~~ 1905-06.

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PREFATORY NOTE.

I should like to be allowed to acknowledge the help I have received in preparing this Monograph from Mr. Percy Brown, Principal, Mayo School of Art, Lahore, who kindly allowed me to see an article on carpets as yet unpublished, which he has written for a hand book to the Lahore Museum; and my acknowledgments are also due to several of the Amritsar Manufacturers, particularly to Messrs. Devi Sahai Chamba Mal, for their courtesy in allowing me to see their factories and in explaining to me the process of manufacture.

DELHI :
10th November 1906.

C. L.

No. 282 (Commerce and Industry).

FROM

THE HON'BLE MR. E. D. MACLAGAN, C. S.,
Chief Secretary to Government,
Punjab and its Dependencies,

TO

THE SECRETARY TO THE GOVERNMENT OF INDIA,
COMMERCE AND INDUSTRY DEPARTMENT.

Dated Lahore, 19th April 1907.

Commerce and Industry.

SIR,

WITH reference to your letter No. 4922—4931-27-1, dated 11th September 1905, I am directed to submit, for the information of the Government of India, a monograph on "carpet making" in the Punjab compiled by Mr. C. Latimer, Assistant Commissioner, together with the Financial Commissioner's forwarding letter No. 821, dated 15th March 1907.

2. The Lieutenant-Governor agrees with the opinion of the Financial Commissioner that Mr. Latimer deserves much credit for his interesting monograph.

I have the honour to be,
SIR,
Your most obedient servant,
E. D. MACLAGAN,
Chief Secretary to Government, Punjab.

Punjab Government Press, Lahore—1-5-07—2207—628—C. L.

No. 281 (Commerce and Industry).

FROM

A. L. DANSON, ESQUIRE,

Under-Secretary to Government, Punjab,
Revenue Department.

TO

THE DIRECTOR OF LAND RECORDS,
PUNJAB.

Dated Lahore, 19th April 1907.

Commerce and Industry.

SIR,

IN acknowledging the receipt of your letter No. 821, dated the 15th of March 1907, forwarding a monograph on "carpet making" in the Punjab by Mr. C. Latimer, Assistant Commissioner, I am directed to say that the Lieutenant-Governor agrees with the opinion of the Financial Commissioner that Mr. Latimer deserves much credit for his interesting monograph.

I have, &c.,
A. L. DANSON,
Under-Secretary to Government, Punjab,
Revenue Department.

Punjab Government Press, Lahore—1-6-07—2207—600—C. L.

No. 821.

FROM

W. S. HAMILTON, ESQ., C.S.,

Director of Land Records, Punjab,

TO

M. IRVING, ESQ., C.S.,

Under-Secretary to Government, Punjab,
Revenue Department.

Dated LAHORE, *the 15th March 1907.*

SIR,

Sub-head No. 701.
File No. 273.

IN compliance with the orders conveyed in your endorsement No. 111-A, dated the 13th November 1905, forwarding a letter No. 4922/4931-27-1, dated the 11th September 1905, from the Under-Secretary to the Government of India, Department of Commerce and Industry, specifying carpet-making as the subject chosen for the industrial monograph for the year 1905-06, I am directed by the Financial Commissioner to submit a monograph on the industry prepared by Mr. C. Latimer, Assistant Commissioner, Delhi.

2. As will be seen Mr. Latimer has dealt with his subject under two main heads: *viz.*, those of dari-making and carpet-making. The "dari," a floor covering woven from the cotton of the country, is shown to be an indigenous article, though owing to its restricted use among a population mainly occupied in agricultural pursuits the industry connected with its manufacture has attained to no importance. Indeed, it appears that outside the jails, dari-making affords occupation to not more than a few hundred people in the whole Province. The articles manufactured possess no artistic merit, and therefore no commercial value for export abroad.

3. On the other hand, carpet-weaving appears to have been introduced into the Punjab from Persia by the Moghals and to have been entirely a foreign industry. It flourished for but a short time in the 17th century in Lahore and survivals of it in its ancient form are now to be found only in Multan and Dera Ghazi Khan. The modern resuscitation of the industry is subsequent to 1851, the year of the great London exhibition, after which date it was introduced into jail manufactures. During the last 30 years under European patronage Amritsar has established itself as the centre of the trade which is almost exclusively an export trade to Europe and America. Since 1901-02 when the value of annual exports was nearly 10½ lakhs of rupees there has been a serious and steady decline to less than half that value. Whether the trade will ever appreciably expand again seems doubtful. While the decline is mainly attributed to inferior workmanship and materials, no doubt the caprices of fashion are to some extent responsible.

4. Mr. Gordon Walker considers that Mr. Latimer deserves much credit for an interesting monograph which has evidently been prepared with care and attention to technical detail.

I have, &c.,

W. S. HAMILTON,

Director of Land Records, Punjab.

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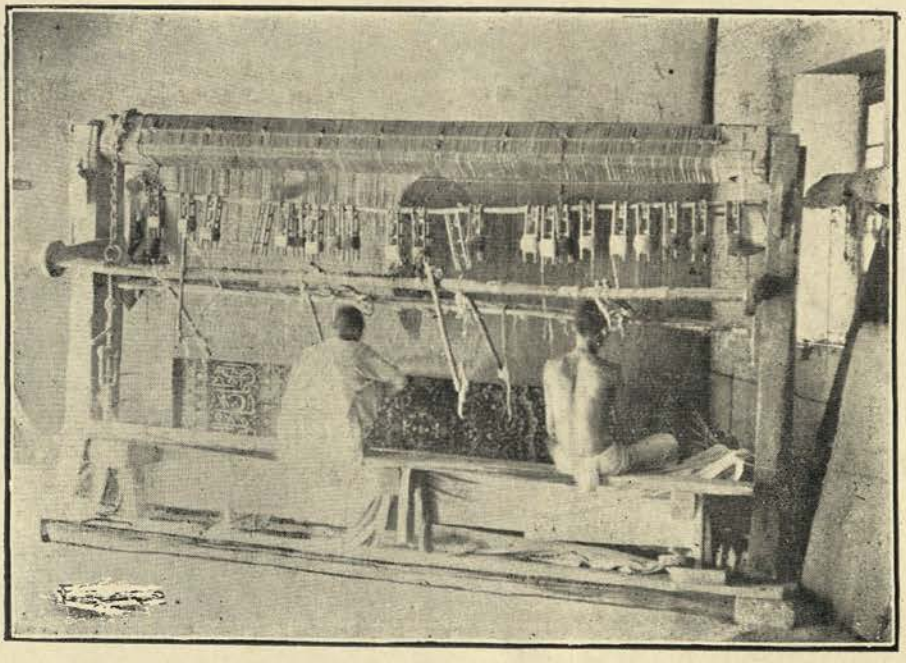

AMRITSAR CARPET LOOM.

SILK CARPET ON LOOM AT MESSRS. DEVI SAHAI CHAMBA MALL'S FACTORY.

MONOGRAPH ON CARPET MAKING IN THE PUNJAB.

INTRODUCTORY.

The carpets woven in the Punjab are of two kinds, the pile carpet, generally composed of a woollen pile on a foundation of cotton, and the *dari*, or *satranji*, a pileless cotton fabric. Intermediate between the two are to be placed the rugs made in the Dera Ghazi Khan District. These, as being of wool, I have preferred to treat under the head of pile carpets, though the fabric resembles more closely that of the *dari*. The two types of carpet are entirely distinct and will be given separate treatment in these pages. I will deal first with the less interesting floor covering, the *dari*.

PART I.

THE DARI.

Origin.

1. The *dari* seems to be peculiar to India, to be a form of carpet unknown to the other countries of the east. It is plainly of great antiquity, and is probably the form of floor covering indigenous to the country. "The aboriginal patterns still used in the industry go far", as Mr. P. Brown points out, "to support this theory", and so recognized an authority as Sir George Birdwood has said that "No conventional ornament is probably more ancient than the coloured stripes and patterns we find on Indian cotton cloths and the cotton carpets called *satranji*". "Cotton carpets" says Baden Powell in his 'Economic Products of the Punjab,' "are in universal use in India." They are variously called "dari" or "satranji", according to the size: *satranji* being a large carpet, and *dari* a narrow piece just big enough for a bed to stand on (which is what natives generally use them for), but Europeans call all sizes indifferently by the name *dari*."

The dari loom.

2. To make clear the method of manufacture I cannot do better than quote the description given by Baden Powell. "All that is requisite", he says, "is a flat smooth space of ground as large as the intended *dari*. At either end of this a long roller is set up, and to either roller the ends of the web are attached, just as in an ordinary loom. When the web is properly stretched out it only remains to provide a simple agency for crossing and re-crossing the threads of the warp in the usual way, as the thread of the warp is passed across and across. This is effected by placing a long pole supported at either end by two legs, trestle fashion across the whole width of the warp. This pole (marked *A. B.* on the plan) is called a 'ghori' (which literally means a 'mare' and is so called from its rude resemblance to a quadruped). From the *ghori* are hung two bamboos (see *a. b.* on the plan), each of which carries a number of threads which are attached to the upper and under threads of the web respectively. When it is desired to cross the threads of the warp it is simply necessary to pull up one of the bamboos and lower the other as the bamboos are merely hung to the *ghori* by ropes at each end, the raising and lowering is easily done by tightening or loosening the suspending string by means of a stick attached (marked *m.* on the plan). No regular shuttle is used. A number of workmen sit in a row on that part of the *dari* which has already been completed, and pass the thread along between the lines of the warp from hand to hand: the thread is wound in a long egg shape on an iron skewer or needle." This form of shuttle is called in the vernacular 'tahri'.

" If the pattern is elaborate there will be a considerable number of these thread shuttles at work ; each workman has charge of his own, and passes it along according to the pattern, taking the thread out and allowing the next workman to insert and withdraw his shuttle in the same manner, and so on ; the threads, as they are passed through the threads of the warp are kept close together, and the work is kept compact and even by striking between the lines of the warp with a kind of fork having a wooden handle and iron teeth and called a *kangi* (or *panja*). The *ghori* above described with its bamboos and threads for raising and changing the lines of the warp can be shifted down to the web as the work progresses ".

" I have seen a large *dari* worked at both ends simultaneously with two *ghoris*, the workmen approaching each other till they finish in the middle. The simple apparatus for *dari* making can be taken up and put down anywhere ".

Operations prior to weaving.—Warp Laying.

3. The warp for the *dari* is laid by fastening one end of the thread to a bamboo fastened at one end of the loom, and leading it to and fro between it and another bamboo at the other end. The thread is carried from the lower side of the bamboo at one end over the top side of the bamboo at the other, thus producing a web of which the threads cross in the middle. The two end threads of the warp in each side are considerably stouter than the rest and serve to give strength to the fabric.

Kind of thread used.

4. The thread for the warp is twisted as well as spun, that for the woof is not twisted. The twisting is done on the 'charkhi' as described in the Monograph on Punjab Cotton Manufactures. The cotton used is, I believe, Indian cotton. It is purchased ready spun, being spun either on the *charkhi* or machine spun on European machinery.

'Dolra' and 'Jajam'.

5. At Umballa there is made, in addition to the common one, a type of *dari* called 'dolra', or when of somewhat finer quality 'jajam'. It is described as being of very coarse old cotton neither fine nor durable. It deserves special mention here in that the method of preparing the warp is somewhat different from that in the case of the ordinary *dari*; the warp threads being sized in the manner described in the Cotton Monograph before the fabric is woven. The *dolra* is sold at about a rupee the seer.

Dyeing.

6. Dyeing is not done by the *dari* weaver; the cotton is sent to the dyer to be dyed. The colours used are, I believe, largely European, though indigo seems to be used for blue.

Extent of the industry.

7. The industry is of small importance in the Punjab. The trade returns for the province give no separate head for *daris*, and it is therefore impossible to give any trustworthy estimate of the provincial outturn. It will be seen, however, that it must be of quite inconsiderable extent. It is only in the districts of Delhi, Multan, Karnal, Umballa, Rohtak and Hoshiarpur and in Bahawalpur State that *daris* are reported to be made, and in no case is the manufacture a large one. *Dari* making is included in the jail industries at Delhi, Multan and Montgomery. The output is however small. It is estimated at about Rs. 1,000 annually from Multan Jail, and is probably less in the other two jails. Outside the jails it is in Umballa City alone that the industry is reported to be a considerable one: of no other centre of the industry can this be said. About 40 persons are engaged in it in Delhi City and about 8 in Ballabgarh in the Delhi District. In Multan there is only one *dari* maker outside the jail. In Hoshiarpur District the number of *dari* makers is put at about 50, the numbers for Rohtak, Karnal and Bahawalpur are quite small. Umballa is probably the only centre which exports its *daris;* they are sent principally to Ludhiana, Ferozepore, Lahore and Multan.

Caste and condition of weavers.

8. The weaving of *daris* is not confined to any one caste ; the Ballabgarh weavers are described as Muhammadans, those in Delhi as either Kumhars or Pathans. In Karnal the weaving is done by Kumhars, in Umballa by Julahas or Ramdasya Sikhs, *the* Multan, Hoshiarpur, Bahawalpur and Rohtak reports make no mention of the caste of the persons employed in the industry. All belong to the lower classes of the population, and

it is probable that none earn more than a scanty, if not precarious, livelihood. Outside the jails the industry is entirely an unorganised one, and the weavers work in their own houses, working at the loom with their own hands. The industry cannot be described as distinctively either an urban or a rural one; it is found both in towns and villages, for while in other places it seems to be mainly a town industry, in Rohtak and Hoshiarpur it may be called entirely rural.

The most common arrangement seems to be that the weaver receives only the price of the labour, while the purchaser supplies the materials necessary.

Prices.

The price of labour is given as at from annas six to annas eight per seer of the finished product. In any case the fabric seems generally to be sold by weight. In the jails the cost is calculated on the size of the fabric; at Multan Jail the prices are quoted at from Re. 1-8-6 to Rs. 2-8-0 per square yard.

Design.

9. Inconsiderable in extent, the Punjab *dari* industry has no artistic interest. The designs consist for the most part of blue and white stripes or of stripes of red, blue or black. "A clever workman", says Baden Powell, "can produce various shapes in a *dari*, such as squares, diamond shapes, &c., provided only that the figures of the pattern are not too complicated, and are made up wholly of straight lines". In the Punjab, however, the plain striped designs are almost universal, and even as such have no distinction. Of the finer *daris* noticed by Sir George Watt in his descriptive catalogue of the Delhi Exhibition in 1903, none were from Punjab looms. Probably the best work to-day both in design and in workmanship is turned out in the jails. The work done outside is almost entirely coarse in workmanship, and to design very little attention is paid.

Size and shape of daris.

10. For native use the *dari* made is generally a small oblong fabric of the size to spread on a bed. Large *daris* for spreading on the floor are manufactured mainly for European use, but the Hoshiarpur report mentions that large *daris*, sometimes as much as 34 feet in breadth, are made for use at weddings.

PART II.

PILE CARPETS.

CHAPTER I.—HISTORY.

Origin.

11. It appears to be beyond dispute that the manufacture of pile carpets is not an industry indigenous to India. "The Indian sumptuary desires", says Sir George Watt, "are more naturally met by gold *masnads* than by expensive carpets", whereas "with invaders and conquerors who had personally known and experienced in cool climates the advantages of such carpets the desire for them would naturally be greater than with the people of a tropical country who desire coolness rather than warmth". Sir George Birdwood conjectures that the industry was first introduced into India by the Saracens, and from the evidence which is afforded by the designs employed he argues that Persia was probably the country from which they introduced the handicraft.

Early history.

12. Whatever industry may have been introduced by the Saracens into the provinces in touch with a sea-borne trade, as far as the Punjab is concerned, it would seem that we must look to the Mohammadan invasion for the first introduction of pile carpets. It is true that in Bahawalpur the craft is described as being of immemorial antiquity, and the Multan* industry has been called an indigenous one. The writer of the Multan District report points out, however, that the names of fabric and tools as well as design and method of weaving prove the industry in Multan to be of Persian origin, and in Bahawalpur the industry has always been exclusively a Mohammadan one. We shall probably be right therefore in attributing the importation of the industry into the Punjab to the races who entered the country from Central Asia. But while it seems

* The cotton pile carpet so characteristic of Multan has only been made there in the last 50 years.

probable that the invaders from the north introduced it at a far earlier date it is not, so far as the writer is aware, until the reign of the Emperor Akbar that there is any positive evidence of its existence in the province. The writer of the "Ain-i-Akbari" mentions the fact that Akbar introduced Persian workpeople and started a carpet factory at Lahore. It is stated that the carpets made were of "wonderful varieties and charming textures" and that "the carpets of Irán and Turán are no more thought of". If there were any doubt of the truth of the historian's statement, or of the fact that the industry introduced by the Emperor survived his death, it would be dissipated by the existence at Jaipur of carpets dating from the time of his grandson, and bearing upon them labels which denote them to be of Lahore manufacture. It is true that tradition at Jaipur attributes these carpets to quite another source. They are commonly supposed to have been brought as the spoils of war from Herát by Maharaja Man Singh, Governor of Kabul, from 1590 to 1615. Colonel Hendley, however, rejects this tradition and believes that the carpets are really, what their labels purport them to be, of Lahore manufacture, and of dates from 1634 to 1650. That the Lahore industry had a more than local reputation is proved by the fact that there is in the possession of the Girdlers' Company in London a carpet specially woven at Lahore in 1634 for one Richard Bell, Master, and presented to the Company "in token of his love," and the spasmodic supplies of so called Lahore carpets shown in the trade returns of the East India Company would seem to show that the industry was of not inconsiderable extent. It seems probable that not only in Lahore but in Delhi also carpet weavers were to be found among the dependants of the Moghal and of the nobles of his Court. But it is difficult to determine how far the meagre references which are extant point to the existence of any widely established industry in the Punjab. In Multan it is true the industry seems to have established itself as a household craft, and to that fact no doubt it owes its continuous existence; in Bahawalpur also a household carpet industry existed up to about ten years ago. But in the other cities of the province the industry would seem to have been purely a factory one, carried on by workers brought into the country for a particular purpose, and taking no permanent root there. Sir George Watt indeed suggests a doubt so to whether the so called Lahore carpets, mentioned in the returns of the East India Company, refer to the products of the Lahore and not to those of trans-frontier looms. On the other hand it has been argued by Mr. Vincent Robinson that from Akbar's time a large trade in Indian carpets came into being: that "the spread of the manufacture extended over the whole of India, and as late as the middle of this century was practised very much in its integrity, from Kashmir to Tanjore." Mr. J. K. Momford, an American writer, has gone further, and has asserted that the system so grounded "was literally and figuratively inwoven with the family and civil life of the people". The evidence, however, would seem to suggest that in the Punjab the industry took little permanent root except in Multan and Bahawalpur, and that in any case it possessed by the middle of the nineteenth century very little importance. Among the exhibits of Indian carpets sent to London for the Exhibition of 1851 the Punjab was not represented at all.

Beginning of European influence.

13. In the London Exhibition of 1851 we find the first of the outside influences which led to a revival of carpet weaving in the Punjab. It was then that by the generosity of the Imperial Government the attention of the European markets was first directed to Indian carpets, with the result that the export trade revived, if indeed it may not be said then first to have come into existence. The Punjab itself was apparently unaffected by the new impulse for many years; at any rate there is nothing to show at what date the demand for carpets for export was first felt in the province.

Introduction of the industry into the jails.

14. Before the year 1862, however, the industry had entered on a new and distinct phase of its existence, for before that date the weaving of carpets had been introduced into some of the Punjab Jails. "It was not", says Mr. J. L. Kipling, "till the Exhibition of 1862 that the Punjab was known outside its borders for the production of carpets, and then only by the productions of the Lahore Jail executed for a London firm". By the year 1864 the jail industry had spread, for we find that Rawalpindi and Lahore Jails

both sent carpets to the Exhibition of that year, and the exhibit of carpets from Multan seems to mark the first appearance of carpets from that city in an area wider than its immediate neighbourhood. At the Exhibition of 1883 the extension of the industry was marked by the exhibition of carpets from Delhi Jail, from the Industrial Schools of Kasur and Hoshiarpur, from Multan and from Dera Ghazi Khan.

Amritsar and the export trade.

15. Before 1883, however, the industry had taken a fresh start in another and a more spontaneous direction. Before that date it had established itself in Amritsar, the place which is now the head-quarters of the industry in the province. Various causes of which the most tangible would seem to have been a serious famine in Kashmir, referred to by Baden Powell in his "Punjab Manufactures", had combined in bringing about a considerable influx of Kashmiri immigrants into the province. This was about the year 1840. The immigrants, weavers by craft, settled in large numbers in Ludhiana and Amritsar, and found employment in making cheaper varieties of the Kashmir shawl, then so popular in Europe. But this means of livelihood proved short lived, for about the year 1870, either from a change of fashion, or more probably from the growing deterioration of the work, the European demand for these shawls declined, and then came to an end, and the shawl weavers found their occupation gone. The growing export trade in Indian carpets seems to have suggested the idea that the manufacture of pile carpets would probably afford a profitable outlet for the skill which the Kashmiris possessed, skill not only in weaving but also, what was perhaps more important, in dyeing. It is accordingly from the period between the years 1870 and 1880 that the oldest of the well known Amritsar firms date their birth. Their progress was apparently slow and the jails, notably those at Lahore, Delhi, Multan, Rawalpindi and Montgomery, continued up to about the year 1890, to carry on a considerable export trade. By the year 1890, however, the competition of the Amritsar firms had begun to make itself felt, and from that time onwards they gradually absorbed the export trade which existed and increased it to far larger proportions. Thus to the jails was left only a small local trade. It was the jails, however, that had themselves given to their competitors the means to outdo them. In 1887 Messrs. Devi Sahai Chamba Mal, the oldest of the Amritsar firms, had obtained the permission of Government to inspect the Lahore Jail factory and to purchase some designs therefrom, and following upon this the same firm obtained the services of Mr. Blake, a retired Deputy Superintendent of the Lahore Central Jail, to supervise their factory. In 1893 the Amritsar industry received a strong impulse from the exhibit of some Indian carpets at the world's fair at Chicago. The result was the opening of a fresh market in America to the trade, and the effect on the volume of exports was at once felt.

Development up to the present day.

16. It was not until the year 1897, however, that the Government of India found it necessary to give a separate head in its trade figures for carpets and rugs in the Punjab. In the year 1897-98 the values in exports were Rs. 3,10,275 and for inter-provincial trade Rs. 77,050. The output for export increased with enormous rapidity and the increase was practically all in the Amritsar trade, till the figures for exports reached in the year 1899-1900 the sum of Rs. 8,56,740. In the two following years the trade increased; the number of maunds exported went up to 5,670.* Not only had the existing firms at Amritsar increased their output but new factories sprang into existence. This sudden extension of trade was unnatural; it coincided with the production of much inferior work, and the trade has now shrunk to very much smaller proportions. The last figures available show exports from the province at Rs. 5,03,982. The causes of the fall are probably to be found in the fact that bad workmanship was found out, that the market was flooded, and that many of the manufacturers lost large sums in advances to their employees, a subject which will be treated of later. Whatever the causes, the result has been that the number of manufacturers in Amritsar has decreased, and that their output has decreased in an even greater degree. The carpet

* These figures include those for the block of territory from the Indus to the Jhelum and for the Peshawar and Kohat block, excluded from other years as not representing Punjab carpets

trade in that city—almost entirely an export one—seems now, however, to be stable; it is to be hoped at any rate that it has reached a natural and secure position. Meanwhile in other parts of the province the industry has been pursuing the even tenour of its way. The industry started at Kasur in 1876, and that founded in Hoshiarpur by Mr. Coldstream when Deputy Commissioner, have indeed disappeared. A factory started a few years ago at Delhi was found to be unprofitable and has been abandoned. The Multan industry, however, seems to have remained unaffected either by the sudden popularity of the Punjab carpet or by its subsequent decline in commercial importance. It is matter for regret that outside the jail the Bahawalpur craft should have become a thing of the past. But the trade returns show that the internal trade of the province has been keeping its position, if it has not in the last eight years made substantial progress. After this brief sketch of the history of the industry we are in a position to consider it as it exists at the present day.

CHAPTER II.—EXTENT OF THE INDUSTRY.

Places of manufacture.

17. Pile carpets are made in the following cities and districts of the Punjab:—

AMRITSAR.—With offshoots of some of the Amritsar firms at Batala in the Gurdaspur District, Sujanpur in the Gurdaspur District, Majitha and Jandiala in the Amritsar District, and at Lahore. The Amritsar industry is entirely a factory one.

MULTAN.—A household industry: also carried on in the jail.

DERA GHAZI KHAN.—Rugs, saddle bags, horse and camel trappings are made by women in their houses. These rugs have no pile; they are woven like *daris* with a warp and woof of wool.

HISSAR DISTRICT.—In the Hindu Orphanage at Bhiwani.

GUJRAT.—In the Church of Scotland Mission Industrial School.

MONTGOMERY.—In the Central Jail.

LAHORE.—Carpets are made in the jail, and at least one of the Amritsar manufactories has a branch at Lahore.

GURGAON.—At Hassanpur in the Gurgaon District there is one workshop where cotton pile carpets, known locally as 'Miqrazi' carpets are made.

DELHI.—In the jail: there is also a little spasmodic weaving in a few houses near the Ajmeri Gate and one of the merchants in the Chandni Chouk makes carpets occasionally to order. Cotton carpets are also made to a small extent at Ballabgarh in the Delhi District.

BAHAWALPUR.—Jail (introduced in 1878); given up by outside weavers 10 or 12 years ago.

Conditions under which carpets are made.

18. The industry is carried on under three conditions, as Mr. Percy Brown points out in the note he has contributed on the subject; first under European or native supervision, in factories as at Amritsar or in schools as in the Hindu Orphanage at Bhiwani and the Mission School at Gujrat; secondly, under Government officials, as in jails; and thirdly, by private enterprise in the workers' houses, as at Multan, in the Dera Ghazi Khan District, and to a very small extent in Delhi.

Number of persons employed in the industry.

19. No accurate figures showing the number of persons employed are available (the census figures give no help at all, in fact they are misleading) but the figures given below, are, I believe, approximately correct.

Amritsar—1,800 men and boys (including dyers and carders, the spinning is done by women in their houses).

Batala—330 weavers.

Lahore—No figures for the jail, perhaps 50 weavers outside.

Sujanpur—60 weavers.

Majitha—30 ,,

Jandiala—30 ,,

Dera Ghazi Khan—No figures.

Bhiwani—No figures.

Gujrat—8 weavers.

Hassanpur—4 or 5 weavers.

Montgomery Central Jail—No figures of number of men employed.

Delhi—7 or 8 men are employed in the jail, perhaps the same number spasmodically outside. About 8 persons are employed in carpet weaving in Ballabgarh.

Multan—42 carpet weaving shops with 50 weavers at work. No figures are given of the number of men employed in the Jail, but the number must be small.

Bahawalpur—There are 6 looms in the jail, but carpets are only made there when specially ordered.

20. The figures set out above show that, with the exception of Amritsar (and its offshoots) and Multan, carpet weaving is an inconsiderable industry in the Punjab. The actual output it is impossible to estimate accurately, for there are no figures to show sales within any particular provincial block as chosen for statistical purposes. I give below however figures, taken from the trade returns, which give a good notion of the trade within and beyond the province for the past eight years. The detailed figures will be found in the Appendix. The figures for trade beyond the province may be taken as representing fairly accurately the Amritsar trade (including under this head work done in the branch workshops of the Amritsar firms) : for this alone and almost exclusively is an export one :—

Output (*a*) As shown in trade reports for the province.

	Exports.		Internal Trade.		Value per md.
	Mds.	Rs.	Mds.	Rs.	Rs. a.
1897-98	1,379	3,10,275	338	77,050	225 0
1898-99	2,581	5,85,887	283	64,241	227 0
1899-1900	3,683	8,56,740	323	75,138	232 8
1900-01*	5,512	10,00,425	No figures.		181 0
1901-02*	5,670	10,37,610	No figures.		183 0
1902-03	3,726	6,81,858	481	88,023	183 0
1903-04	3,102	5,67,666	623	1,14,009	183 0
1904-05	2,754	5,03,982	402	73,566	183 0

21. In preparing the above figures I have neglected the carpets exported either beyond the province or to other statistical blocks within the province, from territory between the Indus and the Jhelum and from the Peshawar and Kohat block : the latter because it now no longer forms part of the Punjab, and the former because the carpets exported therefrom are not manufactured within the block. The figures in the reports for the Jhelum to Indus block probably represent carpets from Kashmir and Khorasan, and must therefore be excluded from an account of the Punjab industry. For the years marked with an asterisk, no detailed figures, by blocks, are available, and I have therefore quoted figures including the amounts excluded from the other years.

22. The following figures extracted from district reports will serve to supplement to some extent the figures printed in the Provincial trade reports :—

(*b*) As indicated in district reports.

Lahore : the jail output has been of the value of about Rs. 4,000 for the past four years ; it was considerably larger a decade or so ago.

Delhi Jail : 2 or 3 carpets annually, worth perhaps Rs. 700 or Rs. 800.

Ballabgarh : Rs. 100 worth (including *daris*) turned out yearly.

Montgomery Jail : there is said to be a profit of Rs. 1,000 annually on the carpet industry, which, putting the profits at 10 per cent. would give an output of carpets worth Rs. 10,000 a year.

Multan Jail : output Rs. 721 per annum.

Bahawalpur Jail : probably only 3 or 4 carpets a year ; the annual output is certainly not more than Rs. 1,000 in value.

Multan : 1,000 couch sized rugs (*ghalicha*) and 6,000 *asans* are said to be made annually. The values of exports are estimated at Rs. 12,000, and of local sales Rs. 8,000. Carpets exported are sent chiefly to Lahore, Amritsar, Rawalpindi, Kapurthala, Bahawalpur, Jhind, Chamba, Hardwar, Benares, Peshawar, Sukkur, Karachi, Shikarpur. The rugs sent to Lahore and Amritsar are nearly all the small sizes known as 'asans.' To Sindh are sent for the most part what are called "Garbi" rugs (of a mixed cotton and woollen fabric).

Chapter. III.

Materials used in carpet making and some details of their cost.

Materials of which the fabric is composed.

23. The materials used in the manufacture of pile carpets are cotton, wool, *pashmina*, *ak* floss, silk and hemp, exclusive of the various products used in dyeing.

Cotton.

24. Cotton is the material ordinarily used for the warp and woof of the Punjab carpet. Wool is never used for that purpose as is sometimes the case with trans-frontier carpets, though the Dera Ghazi Khan *khilim*, which is not a pile carpet at all, has a woollen warp and woof. In Multan for the last fifty years a carpet has been made with a pile of cotton, and a mixture of wool and cotton is also used there to some extent for the pile. Cotton pile carpets are also made at Ballabgarh in the Delhi District, at Hassanpur in the Gurgaon District and in the Lahore Central Jail. The cotton used is for the most part Indian cotton machine spun. Cotton thus prepared is preferred to hand-twisted yarn, as being stronger and no more expensive. In Multan imported cotton is used for the more expensive carpets. The price for cotton, purchased machine spun from the mills, is given at from Rs. 4-8 to Rs. 5-8 per 5 seers for Amritsar, or Rs. 36 the maund, at Rs. 25 the maund for Batala (the cotton is purchased from mills at Amritsar and Lahore). For Delhi Jail the price is given at Rs. 27-11 the maund. For Multan the price is given as annas 13 per seer (or Rs. 32-8 per maund) for country, and Rs. 1-6 per seer for imported cotton. I think it probable that the writer of the Amritsar report was misled as to the price of spun cotton. The price of cotton thread at Hassanpur is given at annas 15 per seer.

Wool.

25. Wool is the material ordinarily used for the pile of the carpet. In the factories, as at Amritsar, it is local wool from the neighbouring flocks, purchased raw. To the excellence of the fleeces in the neighbourhood of Amritsar would seem to be due part of the success of the carpet industry in that place. The price of raw wool is given at Rs. 21 per maund at Amritsar. The branch workshops of the Amritsar firms for the most part get their wool ready dyed from Amritsar but one of the Batala manufacturers buys his wool raw. One of the Amritsar firms uses Bikaniri wool, purchased in Bikanir for the finer counts of stitch. In Multan the prices given are Re. 1 per seer for ordinary and Re. 1-2 per seer for superior wool. Local wool is used, and the price would seem to indicate that the wool is purchased spun, not raw. In jails the wool is purchased in skeins of yarn ; the price is quoted in Delhi at 12 chittaks the rupee, or about Rs. 53 the maund. All the prices given are, however, subject to variation.

26. "Pashm"; says Baden Powell in his book on the Economic Raw Products of the Punjab, "is a downy substance growing next to the skin and under the thick hair of the Tibbetan goat; it is of three colours, white, drab, and dark grey or *tusha*. The best kind is monopolised by Kashmir and is the product of Turfan and the provinces of Chinese Tartary. The Punjab is supplied from Changthang, whence the wool is exported by Leh to Amritsar and the other shawl weaving cities of the Punjab."

Pashmina.

27. "Rampur is a great mart for the reception and forwarding of wool. The prices (Baden Powell was writing in 1868) usually are Rs. 3 to Rs. 4-4 a seer of uncleaned and Rs. 6 to Rs. 7 a seer of cleaned *pashm*; 'tusha' wool sells at Rs. 2 to Rs. 3 a seer, and, if cleaned, at Rs. 5 to Rs. 7 per seer."

28. *Pashm* is used, but to a very limited extent, for the pile of carpets. It is only used for those of the finest stitch, and for such expensive work there is but a small demand. The prices quoted for Amritsar to-day are Rs. 2-12 to Rs. 6 per seer.

29. *Pashmina* carpets are woven on a cotton warp and the woof is of cotton also.

30. One of the Amritsar firms introduced so called *pashmina* from Kerman, but has now given it up. Baden Powell mentions Kermani wool as being used as a substitute for or to adulterate the true *pashm*.

31. It is, I think, doubtful whether any real *pashmina* is now used, as the price is so great. It is probably used, if at all, only at Amritsar and in some of the carpets made in the Lahore Jail.

32. Silk is used, to a still more limited extent than *pashm*, for the manufacture of the most expensive carpets. It is woven on a silken woof and warp, the price of the carpet so made being about Rs. 150 per square yard. It is stated that a number of silken carpets used to be made in Amritsar, but such carpets are now only made in compliance with an occasional order. As a rule the pile is all of silk, when it is used at all; but I saw one carpet in Amritsar in which the bulk of the pile was of wool, but parts of the design were done in silk, producing a curiously lustrous effect amid the woollen pile. The silk is purchased raw in Bombay and is washed, spun and dyed in Amritsar.

Silk.

33. *Ak* floss, the floss of the *Calotropis gigantea*, is used in Bahawalpur only for the pile. Its use is very restricted: the carpet industry in Bahawalpur is a small one, the *ak* is not cultivated but collected wild, and there is a very small supply of it. It is purchased raw and prepared in the jail; it closely resembles silk in appearance. It is hoped to cultivate it and extend its use.

Ak floss.

34. Hemp (native grown hemp) has been introduced of late years at Multan for the warp of carpets, an undesirable innovation, sometimes attributed, it is difficult to say on what grounds, to European influence.

Hemp.

35. Mr. Percy Brown, speaking of dyes, says, "these used to be almost entirely vegetable, and of local manufacture. The manufacturers of Amritsar generally maintain that most of their dyes are obtained in this way: they certainly appear to prepare them themselves on their own premises. I believe the Amritsar firms guarantee that vegetable colours only are used, and that they are permanent."

Dyes.

36. The following list of dyeing materials and their prices has been supplied to me from Amritsar:—Indigo for blue, it is purchased raw at Rs. 6 per seer and, when dissolved in sulphuric acid, at Rs. 1-8 per seer.

Dyeing materials.

Cochineal, for crimson, red or rose, it costs Rs. 3-8 to Rs. 5 per seer.

Majid (or majith), madder (*Rubia munjista* or *cordifolia*) for terra cotta: purchased at Rs. 14 per maund.

Pomegranate shells and flowers, naspal (*Punica granata*) for yellow: the shells cost Rs. 4-9 and the flowers Rs. 3 per maund.

Lac (for an account of lac the reader is referred to page 190 of Baden Powell's "Economic products of the Punjab") for crimson shades; it is purchased at Rs. 10 per maund.

Rheond (*rhubarb*) for dull reds and yellows, purchased at Rs. 8 per maund.

Greens are produced by a mixture of indigo and certain yellow dye stuff.

The following chemicals are used as mordants:—Sulphuric acid for use with indigo, lac and cochineal. Sulphate of iron for the production of greys and blacks, in combination with barks containing tannic acid.

Alum in combination with cochineal for the production of cerise and crimson.

Hydrochloric acid with lac for bright red.

The following list of colouring matters obtained from the Delhi Jail will serve to supplement to some extent the dye stuffs given above:—

Kesu, the flowers of the Dhak (*Butea frondosa*) for greenish yellows.

Turmeric, *haldi*, (*Cucuma longa*) for yellows.

Akalbir (the root of the *Datiscus cannabinus*) for yellows.

Kamila (the powder from the capsules of the *Rottlera tinctoria*) for yellows

Mendhi (*Lawsonia inermis*) for reds.

Kikar bark for browns.

Kath (the extract of *Acacia Catechu*) and *Maien* (the galls of the *Tamarix furens*) are used in dyeing with madder.

Murabba nil (sulphate of indigo) for blues and greens.

Use of lime.

37. Before dyeing with any of the red shades the wool to be dyed is placed in a solution of slaked lime, which serves to remove fat and foreign bodies from it.

Number of shades produced.

38. The dyeing substances given above are used not only alone but in combination, to produce different shades. In the Delhi Jail there is a list of some seventy shades which can be produced by combinations of these substances. The Amritsar manufacturers assert that they can produce some seven hundred distinct shades; it is difficult to believe, however, that all are produced solely with vegetable dyes. In Multan aniline dyes are used to a large extent; the process of dyeing with mineral dyes is, however, so foreign to India that I have not thought it necessary to give any account of it here.

Aniline dyes.

Chapter IV.

Process of weaving and preparation of the materials.

Carding, spinning and twisting of wool.

39. It now remains to describe how the materials for the carpet are prepared, and the manner in which the fabric is woven from them. The processes I am about to describe are those employed in Amritsar and may be taken to be those employed throughout the province, except when I have stated specially that any different method is in use. To take first the materials for the pile of the carpet, wool, *pashmina* or silk. The wool is purchased raw, it must first be carded or scutched. This operation is carried out by means of the *Pinjin* or bow, described in the Monograph on Woollen Manufactures (1884-85) to which the reader is referred. This is done within the factory. After being carded the wool is handed over to women who take it to their homes and spin it on the ordinary *charkhi* or spinning wheel (also described in the Monograph on Woollen Manufacture in the Punjab). After being spun the wool is returned to the factory to be dyed; first however, it is twisted (the *charkhi* being used), and made up into skeins *(challas)*.

Preparation of silk, pashm and ak floss.

40. Of the preparation of the other materials used for the pile, silk, *pashmina,* and at Bahawalpur, *ak* floss, it is necessary to say but little; their use is exceedingly restricted for *pashmina* has become almost prohibitive in price, and a silk carpet is far too expensive to be an article of commerce. It is made on rare occasions to special order. *Pashmina* is said to be purchased spun, and only to be twisted and dyed by the carpet manufacturers. Silk is purchased raw in Bombay, it is washed, spun and dyed by the manufacturer. *Ak* floss is collected and brought into the jail in a raw state. I have no details of the method of its preparation at my command; its use is, however, so rare that to give such details is, I think, unnecessary.

Preparation of cotton.

41. Of the preparation of the cotton little is to be said; it is purchased spun, it has only to be twisted to the requisite thickness (this is done on the *charkhi*) and dyed. The warp is usually undyed, the woof is generally dyed, a plain colour. When used for the pile as in the case of the cotton carpets at Multan, or the "Garbi kalins" made at the same place, the cotton is of course dyed a variety of colours to form the pattern of the carpet.

Dyeing: preparation of materials to receive the dye.

42. The subject of dyeing is a large one and cannot be adequately treated in this Monograph. The list of substances in the previous chapter gives however some idea of the sort of materials used. Both materials and methods are almost entirely native to India, except in the case of the aniline dyes used principally at Multan. The process of dyeing with mineral dyes as being one purely of European origin I do not think it necessary to describe. The general principle in colouring with Indian dyes is to wash the wool first in water, so as to remove all foreign matter, and then to place it for a period of two hours in a solution of soap nuts or haritha *(Sapindus emarginatus).* It is then again washed in water and dried thoroughly. The wool is again dipped in water before being put into the *deg* or cauldron, for dyeing. Before dyeing red the wool is placed in a solution of slaked lime. Sulphuric acid, when used, is placed in the cauldron after the dyeing ingredients have been mixed in boiling water.

Actual process of dyeing.

43. After being thoroughly washed the wool is placed in the cauldron and boiled until the required shade is obtained. "The apparatus of a native dyer," says Baden Powell, "is very limited and inexpensive. His fire and pans wherein he can boil such articles as require it, earthen 'nands' and jars of various sizes, and cloth for filtering, constitute almost his only requisites. The workshops of native dyers are generally dirty in the extreme, notwithstanding this colours of surprising beauty are often produced." The dyes used by the Amritsar carpet manufacturers are all, it is claimed, fast, the aniline dyes as employed at Multan are not.

Warp-laying.

44. We are to suppose then that the materials for the carpet are now ready, the cotton for the warp and woof and the wool dyed the requisite colour. The warp must first be prepared, it is done as follows:—Five iron pegs are stuck upright in the ground in a straight line. The two farthest ones are just as far apart as the length of the carpet, including the fringe, is to be, or just a little longer to allow for shrinkage. The third peg is half way between the two outer ones, and the other two each within a short distance of the outer one on each side. The cotton thread is then taken in hand by the warp layer and passed up and down the row of pegs. He drops it alternately to the right and to the left of each peg as he walks up and down the row, till the whole thread is laid, stretched round each of the outer pegs and passing alternately on each side of the inner ones. The number of threads for the warp has been calculated beforehand, varying of course with the breadth of the carpet and the fineness of the work (in a fine carpet the threads are finer and closer together, in coarser work they are stouter and further apart), and the thread is wound round the pegs as many times as there are to be threads in the warp. Bamboos are then inserted in place of the two end pegs, and the pegs are all removed. The threads are then arranged in order side by side along the bamboos. The crossing of the threads at each end is either preserved by inserting stout twine between the threads at

the point where they crossed over to the two pegs next to the outside pegs, or the threads may lie round the bamboos without any crossing. The warp is then double, having two threads back and front, the back immediately behind the front. The warp (*tani*) is then complete and ready to be placed on the loom.

The loom and the method of weaving.

45. The loom (*dukan*) is placed vertically* on the ground. It consists of two upright poles (*thummi*) marked *M* on the plan made usually of *kikar* wood, these posts support two heavy wooden rollers (*tur*) marked *A B* usually made of deodar or *kail* wood. The rollers lie horizontally between the posts, the lower one in a trench dug between them, in which it lies level with the ground, and the upper about five feet above it. On each of the rollers are square hooks, marked *e.f.* into which the bamboos marked *a.b.* at each end of the warp are fixed, and the top roller is turned round by hand (it has a spike passing through it, by which it is turned) until the warp lies stretched tight between the rollers. The rollers are prevented from turning round by a chain (*sangal*) fastened to each and stretched between them at one side. The chain is fitted in the middle with a screw (*pech*) by which the chain can be tightened or loosened as is necessary. A loom is said to cost about Rs. 100. It will have been seen that the warp is now stretched double between the rollers, the superfluous length being rolled up round the upper roller. The next thing is to affix the apparatus by which the front and back threads of the warp can be crossed. To each of the threads is tied a loop (*gulla*). Each set of loops (*i.e.*, those of the front and those of the back threads of the warp) is then tied to a bamboo marked *c.d.*, of the same length as the width of the loom, and each bamboo is fastened along its length to several bow like objects (*mukra*), marked *k.*, the string corresponding to the bow string being fastened, not as its middle point, to the bamboo fastened to the loops. There is a separate set of bows for each of the two sets of threads. The bow (*mukra*) rests on a beam (*ghori*) marked *C.* fixed on two posts *D.* and *E.* at a height of about three feet from the ground and by moving each set of bows on the *ghori*, so as to tighten or loosen the bow string on the bamboo holding the loop (*gulla*) either the back or the front set of threads of the warp is pulled forward while the other is relaxed. It is thus that the threads are crossed. The loom is now ready for weaving. To begin the carpet three or four rows are woven as in ordinary weaving, the woof threads (*butkas*) being passed between the threads of the warp by hand, and the pile can then be begun. The weavers sit on the ground with their feet in the trench I have mentioned ; as a rule there is a weaver for each 24 inches or so of the carpet's breadth. Above their heads hang balls of different coloured wools. The weaver takes a piece of wool, passes it in a figure of eight round the two threads of the warp (back and front) and cuts off the ends which stick out in front. This is the knot or stitch called 'pech.' The form of knot used is that known in carpet literature as the Sehna knot (called after a town of that name in Persia) ; in this knot the two ends of wool stick out between each thread of the warp. This is done for each thread till one row of stitches has been put in : then a thread of the woof is passed by hand between the warp, beaten down with a heavy comb (called *panja*)* and the threads crossed : then another thread of the woof is passed through from the other side, and the threads of the warp again crossed, and again a row of woollen stitches is put in. After each row of the pile has been put in it is cut off short with scissors. This process is continued till the whole carpet has been completed ; as the work goes on the portion of the carpet woven is rolled up round the lower roller and the warp threads unrolled correspondingly from the upper. The carpet is then finished off by hemming the ends, or a fringe of the warp is left.

Size of carpets.

46. The pile varies from $\frac{1}{8}$ to $\frac{1}{2}$ inch in length. There is of course practically no limit to the length of the carpet which can be manufactured, but the breadth depends on the size of the loom. The biggest loom in Amritsar and probably in the province is 31 feet broad. The Multan rug is generally 8 feet by 4 feet, but a few of the workshops can turn out a carpet 12 feet broad.

* The cotton pile rugs made at Ballabgarh in the Delhi District are, however, woven on the ordinary dari loom (see para 2) ; the knot or stitch consists of ten or twelve strands of untwisted cotton roughly twisted together in the weaver's hands, and there are three or four rows of woof between each row of knots.

Tools.

47. The tools used are very simple :—

(i). A knife 'chhuri' called also 'karad' in Multan, it has a curved blade edged on the convex side, and fixed into a short straight handle: it is used to cut the yarn after each knot has been woven.

(ii). The *panja* or comb, a heavy hand-like comb, the palm of thick wood, sometimes covered with an iron plate and the fingers, or teeth, of iron; they are 10 or 12 in number, and about three inches long. The *panja* is used to make the fabric compact by beating down each line of the woof after it has been put in.

(iii). Scissors (*miqraz*) for clipping each line of pile after it has been put in.

Some details of workmanship in Lahore Jail.

48. The following note I quote from a memorandum prepared by Dr. W. Dickson, formerly Superintendent, Central Jail, Lahore, and contributed by him to Colonel Hendley's work on "Asian Carpets."

49. "The woof threads or *butkas* as they are called are dyed with indigo for the purpose of enabling the person in charge of the work to see that the white warp threads are covered; if they are not covered by being well beaten down, little white spaces are left which are technically called 'Charbi.' On each side of the carpet is a thick strong cotton rope, technically called 'lath' or pillar. Care has to be taken that this is kept slacker than the woof threads, otherwise the carpet will lie in folds on the ground, and the defect cannot be mended. A template, or long strip of wood, is kept suspended at the back of the carpet in order to measure the width and keep it the same during manufacture. In this jail a prisoner called a 'Naqshi' sits behind and reads out the pattern taking one row at a time all through the breadth of the carpet. Some times a workman scamping his work fastens in his stitches to two of the warp threads instead of one, or more properly to four instead of two. This is called 'tath' false. Again he fills in double stitches two at a time instead of one, this is called 'Double *phanda*' or neglects to pass the warp threads, this is called double *phera*. I may mention that the word 'Double' has quite been adopted by the natives. In conclusion I would notice the remarkable facility that many natives have of producing designs. It is merely necessary to give them (especially the class of Sunars or goldsmiths) a rough sketch, photograph, or coloured drawing of a carpet, and they will with a little instruction draw out a carpet stitch by stitch on section paper, and they are seldom wrong in the adjustment of the colours."

The Multan loom.

50. The loom as used at Multan is somewhat different from that in use at Amritsar and the jails, and I think it is necessary therefore to make some reference to it. The side posts of the loom are of brick work, instead of wood, and the rollers are kept in position not by a chain and screw but by a handle fastened on to each and stuck into the ceiling and ground respectively. The mechanical contrivance employed for crossing the threads of the warp is also somewhat different. The heddle consists of only one bamboo rod, fastened by loops (*gulla*, and also called *rachh* in Multan) to one layer of the warp only. The heddle is suspended from the roof instead of being supported as at Amritsar by the pull between the *ghori* and the warp, and it is pulled back by making fast the strings attached to it to nails in the wall. The process of crossing the threads is thus described in the Multan report: "Suppose the warp standing up taut between the rollers; suppose also that the two layers of the warp are standing apart by the pull administered by the heddle to one of the layers, and that above the heddle there is the first crossing of the layers with a bamboo stick lying over it," (*i. e.* between the layers). To cross the threads "the stick over the first crossing above the heddle is pushed lower down by pressure on its jutting ends, and thus the crossing is brought down considerably below the heddle; it is clear that above the crossing the layer that was previously in front has gone to the back"; the woof thread is then passed through, "the stick is raised now to above the heddle and thus the positions of the layers of warp are again interchanged." In the Multan carpet the woof is only passed through

once between each line of the pile instead of twice as is the case with the Amritsar carpets.

Cleaning and clipping of the completed carpet.

51. After the carpet has been completed, it is spread on the ground where it is rubbed with a sort of currycomb, brushed, and again clipped with scissors, to ensure that the pile shall be of the same length throughout the length and breadth of the carpet.

Designs: their origin, and methods of carrying them out.

52. So much for the merely mechanical process of weaving the carpet; the method of carrying out the design still remains to be dealt with. In the jails I believe the carpets are commonly copied from existing Persian designs: the patterns of some however have been derived from other sources, such as the School of Art, and carpet dealers in Europe and America, and some have been designed by men employed in the jail. The master weaver holds in his hand the design to be copied (either a piece of fabric or a design drawn to full scale), and dictates to each weaver the stitches he is to put in, *e.g.*, so many white, so many blue, &c., along the breadth of the carpet. In Multan the designs seem to be largely traditional, they are woven by the weaver from his own knowledge or copied from a sketch in the case of a pupil. In Amritsar the process is peculiar and interesting; it was brought I believe from Kashmir by the weavers, most of whom are of Kashmiri origin. The design for the carpet, whether it be an old Persian design which is to be copied, whether, as is sometimes the case, the pattern is designed in the factory, or whether, and this is the general rule in the factories at Amritsar to-day, the design is sent from Europe or America, is drawn out in pencil to full scale, on ruled paper marked out in square inches. The square inches are divided up again into as many squares as there are to be stitches to the square inch of the carpet. The draftsmen show great skill and freedom in copying patterns, enlarging them in most cases from a copy in very much less than full scale. The pattern, when drawn out thus to full scale, is handed to another man (*talim navis*), with instructions as to the colours to be used. He marks the design so as to show the colour of each stitch, and then taking line by line he translates the pattern on to a slip of paper (called *talim*) using a recognised symbol for every shade used. Each slip contains 6 lines of stitches, and reads, to a person with a knowledge of the symbols, so many stitches of red, so many of blue, so many of white, as the case may be. The "talim" is handed to the weaver, one *talim* for each weaver (each weaver has a breadth of 18 inches or two feet to weave): he fastens it up in front of him as he sits at work, and puts in the stitches as they are shown on the *talim*. If, as often, in fact nearly always, happens, the two sides of the carpet are the same, then the weaver who is doing, for instance, the border design, while putting in the stitches himself, reads them out aloud for the weaver who is doing the border on the other side, and the latter weaves them under his dictation. The general custom is that only one-quarter of the carpet is written out on the talim (the other three-quarters being merely repetitions of the design); some few designs, however, are different throughout, and in that case the whole carpet must be thus translated on to the *talims*. Such a system of course precludes any originality on the part of the weaver, or his leaving any impress of his personality on the work he is doing, for he does not know what the pattern will turn out to be, until it has actually come to completion under his hand.

Quality of carpets.

53. The quality of the carpet depends on the materials used and the fineness of the stitch. By a stitch is meant the piece of wool twisted round the threads of the warp. The unit for estimating fineness of stitch is the square inch, and according as there are more or fewer stitches to the square inch, the carpet is said to be of finer or coarser quality. The work done at Amritsar ranges from a quality of 36 stitches to the square inch (*i.e.*, 6×6) to 400 stitches to the square inch (*i.e.*, 20×20) which is as fine as any of the old carpets from Persia which have come down to us. At Multan the work is considerably coarser ranging from $3 \times 3 = 9$ stitches to the square inch to perhaps 100 (10×10). In Multan however there is commonly only one stitch for two strands of the warp (*i.e.*, two back and two front strands) instead of one stitch to each back and front thread. In the jails the work ranges from about 8 to about 18 stitches to the inch, but

probably most of the carpets turned out by the jails are of the coarser stitch. In fact in the province generally most of the work is of a quality not finer than 10 stitches to the inch.

Kinds of carpets made.

54. The bulk of the carpets made in the province are woven for export and are therefore of a size to suit European and American needs. Such carpets are known as *kalin* or *ghalicha*, which is the Persian equivalent for carpet or rug. In Multan the work is almost without exception done for Indian consumption, and the rug woven is therefore entirely different, "asans," small rugs, generally square, used to sit upon for meals or worship by Hindus and therefore of wool, oblong prayer carpets (*jai namaz*) generally of cotton, for the use of Musalmans, small woollen *kalins* to spread on beds, and the *garbi kalin*, also a small rug, of mixed woollen and cotton pile, chiefly exported to Sindh where it is given to girls on their marriage as part of their dowry. The *garbi kalin* is also largely sold as a woollen rug, the material being adulterated for the sake of cheapness and the purchaser deceived. The Hassanpur and Ballabgarh carpets are made entirely for native use and have only a local reputation.

Chapter V.

Caste and condition of work-people.

Tribes and religion of work-people.

55. If any such proof were needed the fact that the weaving of pile carpets was introduced by Mohammadans would be proved by the fact that almost without exception the weavers and preparers of the materials in the Punjab are Mohammadans. In Amritsar the persons employed in the industry are almost all Kashmiris, though the boy weavers are also drawn from the lower classes of the local Mohammadan population; weavers, dyers, designers, *talim* writers are all commonly Mohammadans, descendants of the Kashmiri shawl weavers of Amritsar. The wool carders are Mohammadans but cannot be allotted to any particular tribe. The spinning of the yarn is the only part of the work done by Hindus, and this is done by women in their homes at the rate of two annas per seer. The report from Batala mentions the following classes of Mohammadans as being employed:—Mochis, Kashmiris, Arains, Rajputs, Hajjams, Julahas, Shekhs, Bharais, Kakezais, Telis, Barwalas, Mirasis and Moghals, and the other offshoots of the Amritsar factories probably contain some such mixture of tribes. The Bahawalpur report states that the industry when it had an independent existence, up to some 12 years ago, was entirely a Mohammadan one, and that the work now done in the State Jail is done by Mohammadans. In Multan the weavers are Mohammadans who assert that they came originally from Persia or Bukhara. Khaja, Chisti, Pathan, Pauli, Kamlah, Nirali are given as the castes which supply most of the carpet weavers. It is only in the jails that the industry is not a purely Mohammadan one, though there too it will probably be found that the weavers are generally Mohammadans.

Wages of work-people and apprentices: (*a*) in factories.

56. With regard to wages:—under the factory system, as for instance in Amritsar, all materials are supplied by the manufacturer to his employees. The rate for spinning has been mentioned above. Wool carders are paid by their work; the rate given for Batala is Rs. 3 per maund; in Amritsar it is probably somewhat higher, as the reason for the opening of factories at Batala and other places in the neighbourhood has been the cheapness of labour as compared with Amritsar. Dyers are paid usually by the month, their wages going up to Rs. 15 or Rs. 20 per mensem, but they sometimes work on contract. Designers and *talim* writers are paid by the month up to Rs. 50 per mensem. They are generally the descendants of Kashmiri shawl designers. The system in Amritsar by which the weavers are paid is somewhat peculiar; the manufacturer contracts for the weaving of the carpet with a master weaver, and the latter provides the labour required in the shape of small boys to whom he pays a monthly wage of from Rs. 6 to Rs. 8. The Amritsar manufacturers were not willing to tell me the rate at which they contract with the weavers of the different grades of carpet. The rate varies with the fineness of the work on which of course depends the time within which the carpet can be completed. The Batala report gives the rate as Rs. 2-5-6 per square yard for a carpet of

8 stitches to the inch, Rs. 3-10-9 per square yard for a carpet of 10 stitches to the inch, and Rs. 4-14 per square yard for a square inch with stitches 11 × 12 (warp 11 to 12 woof). It may be assumed that the rate is considerably higher for the finer work, rising in a ratio considerably out of proportion to the increased fineness of stitch, and that the rates for Amritsar are higher than those for Batala. On the completion of the carpet or of part of the carpet, the manufacturer pays the boy weavers the monthly wage which is due to them, and the balance of the price contracted for by the master weaver is then made over to him. I am told that a master weaver (in charge of three looms) sometimes earns as much as Rs. 60 a month, but it may turn out that he is a loser on the contract, if the pattern is intricate and his boys work slowly. Design and colour have no effect on price, and in the case of a carpet of which the pattern is very intricate the daily wages of the boys may amount to more than the contract price due to the weaver. The boy weavers are taught their trade by the master weaver, they may pay him a small premium, or they may simply work without wages for 6 months or so, till they have learnt the craft. Most of them, I am told, become master weavers when they grow up. The craft is not difficult to learn and is one for which boys are particularly suited, as their small fingers are deft in weaving the pile. The work is not hard; it is done under fairly wholesome conditions, in sheds open to the air on one side, and in Amritsar at any rate one day in the week, Friday, is a holiday.

(*b*) the Jail and household industry.

57. The above remarks apply to the weaving of carpets as practised in the factories. In the case of the jails and industrial schools there is nothing to be said under the head of caste and wages. Prisoners are taught the work in the jail, independently of their previous occupation though naturally any men who have a knowledge of the craft are employed upon it. The household industry is represented by Multan, it existed in Bahawalpur until about 12 years ago. The Multan carpet weaver works in his own house, the work room containing as a rule two small looms. The dyeing is done by the weavers themselves, using both native and aniline dyes. Some of the dyes are brought from Amritsar, and cotton thread for cotton pile carpets is sometimes purchased already dyed. The twisting of the yarn is done by the weavers themselves, or by their wives, or is given to women to do in their homes at low rates. As the weaving is done for the most part by independent craftsmen it is almost impossible to estimate their gains. The Multan report however gives the following rates for weaving $4\frac{1}{2}$ inches breadth of carpet—

Annas 8, when the value of the rug is Rs. 50.
„ 4, „ „ „ „ „ „ „ „ „ 25
„ 2, „ „ „ „ „ „ „ „ „ 10

Characteristics of weavers.

58. As regards the characteristics of carpet weavers there is, with the exception of those of Amritsar, little to be said. They may be regarded as representing the common type of the lower classes of the Mohammadan population; no occupational caste has been formed, nor is there, so far as the writer is aware, any specific name for the followers of the craft. It is in Amritsar alone that any particular trait can be attributed to the carpet weaver and it belongs to him, rather as *Kashmiri than as carpet weaver. This trait is laziness. He is, or was, for circumstances have changed to a certain extent, unwilling to do a stitch of work, until he has received an advance on the contract price of the carpet, and after receiving the advance it is not always easy to induce him to do work of equivalent value. The circumstances no doubt were somewhat peculiar. Carpet weaving in Amritsar was found to be profitable, the demand for carpets became large, and the difficulty was to find weavers to satisfy it. Manufacturers eager to find workmen gave advances readily, and the workman, who knew there to be a continual demand for his services, preferred to leave the factory to completing the work for which he had contracted. He knew that after leaving one employer another was to be found, and one who would be as ready to give him an advance as the former. The result was that the manufacturers found that they had outstanding large balances, which they were

* It is interesting however to note that the custom of demanding advances characteristic of the Amritsar carpet weaver is not unknown among the carpet weavers of other places. The same complaint has been made by manufacturers with reference to the weavers of Lahore and Delhi; no doubt these contained Kashmiris among them.

unable to recover, for nothing was to be gained by suing in the Civil Courts a man who had no property to attach. The provisions of Act XIII of 1859 seem to have failed to meet the case, and it was not until the manufacturers combined to refuse to employ a weaver who was under an obligation to work elsewhere, that any remedy was found. Before this however large sums had been lost. At the present day the difficulty is not so much felt. The demand for Amritsar carpets has declined, and the manufacturer is more nearly in a position to make his own terms with a labour market not too small to meet the demand. Advances are however still given, to a limited extent, and on the occasion of a wedding or any family ceremony involving expense the weaver goes to his employer to ask, as a right, the advance which he requires. The laziness and improvidence of his character remains so far constant that it is only by admitting such claims that the manufacturer can get his work done at all.

Chapter VI.

Prices of carpets and profits.

Cost of manufacture.

59. The question of profits is not one on which the manufacturer is disposed to be very communicative, nor probably are his figures entirely to be relied upon when he does give any information. I have however been supplied with some figures from Batala in the Gurdaspur report, after quoting which I will go on to give such information as has been forthcoming with regard to the price of the manufactured product.

60. The following figures for some carpets would show the expense of wool and cotton threads and the cost of weaving as actually ascertained from the registers of some of the Batala factories :—

	Size of carpet in feet.	Number of warp and woof threads per square inch.	Quantity of wool used.	Quantity of cotton used.	Total cost of weaving.
			Seers.	Seers.	Rs.
I	12×9	8×8	33½	19½	29
II	15×15	8×8	53½	31	45
III	12×9	8×9	37	20	30
IV	10×8	10×10	30	12	33
V	7×7	11×12	19	9	26

61. These figures while interesting enough hardly afford us a basis for estimating the cost price of the carpet, for, in addition to the cost of weaving there is the price of the material, the cost of dyeing, carding, spinning, warp-laying, and cleaning, as well as a proportion of the wages paid to designers and *talim* writers.

62. "The quantity of the wool and cotton threads shown in the above figures," I quote from the Gurdaspur report, "is the total quantity supplied to weavers out of which one-third is wasted in scissor clippings and the cleanings of carpets. This waste wool is sold off in heaps at Rs. 4 or Rs. 5 a maund. The actual weight of a finished carpet is about three seers to a yard."

Sale prices of carpets.

63. The sale prices of carpets as they prevail in the different places of manufacture will be of some interest. The following figures are for woolen carpets, the prices are per square yard, and the number of stitches to the inch indicates the quality of the carpet.

	6 stitches.	8 stitches.	10 stitches.	12 stitches.	14 stitches.	20 stitches.
	Rs.	Rs.	Rs. a.	Rs.	Rs.	Rs.
Batala	...	9	13 0	...	...	...
Amritsar	7	...	...	...	...	75
Multan Jail	...	10	12 8	15	...	...
Lahore Jail	...	10	13 0	17	25	...

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64. In the Delhi Jail the prices range from Rs. 12 to Rs. 20 per square yard, at the Montgomery Jail from Rs. 10 to Rs. 17. In Bahawalpur Jail the prices are Rs. 9-10-0 per square yard for woolen, Rs. 56 per square yard for silk and Rs. 19 per square yard for the *ak* floss carpets. The Multan woolen *kalin* costs from Rs. 7 to Rs. 13 per square yard, and the *asan*, generally a yard square, Rs. 5 to Rs. 12, though a cheaper quality can be obtained. The prices quoted are for carpets of the best workmanship, of the type revived in the jails and exported so largely from Amritsar. Besides these there are the cheaper cotton carpets. At the Lahore Central Jail cotton carpets are woven of 8 or 10 stitches to the inch, ranging in price from Rs. 5 to Rs. 7 per square yard. The cotton carpets of Hassanpur in the Gurgaon District cost Rs. 12 per square yard in the highest and Rs. 3 per square yard in the lowest quality. The cotton *jai namaz* made in Multan costs from Rs. 7 to Rs. 10 per square yard, the cotton *kalin* (usually bed size) from Rs. 7 to Rs. 15, and the *garbi kalin* of mixed wool and cotton pile Rs. 2 or Rs. 2-8-0 per square yard. Probably the cheapest cotton pile carpet made in the province is that woven at Ballabgarh in the Delhi District. This fabric costs little more than a *dari*, being woven at the rate of annas eight to annas ten per seer.

Chapter VII.

Carpet making as an art industry in the Punjab.

The Punjab carpet as a work of art.

65. Carpet weaving may fairly be regarded, at any rate potentially, as an art industry, and it may not be uninteresting therefore to consider what is the status of the Punjab carpet from this point of view. In the remarks that follow it will be seen that I am treating of it largely as an article of export, for it is chiefly as an article of export that it is of importance, but at the same time it must not be forgotten that though meagre, there is a certain output of carpets intended purely for a local market, and to them the remarks dealing with the article intended for export have no application.

Its limitations.

66. The Punjab carpet at its best is a creditable production, its materials are good, its dyes are fast, its designs appropriate and its workmanship such that it will wear for generations. At its worst it is none of these things. But even at its best it is a trade product and not a work of art. There is to be found in it nothing of the individuality of the weaver, nothing that tells us of his daily life. Of the work of the Nomad it has been said that "the wanderer's life and imperfectly understood thoughts, playing as a feeble light in his mind from the far distant past seem to be woven into the little piece of work for those to read who can." In the Punjab carpet of the present day we shall look in vain for any such significance. Nor does the weaver, like the Persian weaver of old, devote his effort to perfecting forms; he already understands designs—themselves "but slow developments of various types of surface decoration, where the forms, originally symbolic, were regarded with superstitious respect and the colourings followed set rules which were seldom deviated from."

Its want of local feeling or originality.

67. In the Punjab the designs employed are either slavish copies of Persian originals or nondescript compositions, containing elements the most diverse, thrown together to suit the exigencies of fashion in Europe or America. In the Jails for the most part accepted Persian designs are used; in the Amritsar factories either these or patterns sent for execution from the buyer over seas. "In the matter of designs" (I quote from the Amritsar report) "the greatest variety may be observed. The original Kashmiri made designs and colourings soon become stale owing to their sameness and want of individuality, and so English and American firms started sending their own designs and colourings which were made in accordance with the trend of fashion of the day. Prominent decorators then went to work and sent out their own creations to be translated into an Indian made floor covering. A very large part of the business done in several of the factories consists in carrying out the ideas of these decorators, and very often a pure 'Louis Seize,' a Flemish 'Renaissance,' a Chinese, or even a 'Rococo' carpet may be seen on loom at Amritsar." Such carpets, except for the accident of manufacture, are of course not oriental carpets at all, and the supreme triumph of the commercial spirit is perhaps to be found in the immense rolls, not

uncommon in the Amritsar factories, of plain unfigured carpet, to be sold in America by the yard as if it were calico or tape. For the past few years however the demand seems to be more for pure Persian designs. In so far as taste means the adaptation of design to the materials in which it is to be carried out, this may be said to denote an improvement of taste, quite apart from the intrinsic beauties of the designs themselves. But it is doubtful whether the comparatively coarse wool of the Punjab is entirely suited to the weaving of the finer Persian designs, and in any case, it has been pointed out by Mr. P. Brown, and probably with truth, that in copying these originals not enough regard is paid to fineness of stitch. There is apt also to be a comparative crudeness of colouring, but with every qualification these reproductions are by no means contemptible pieces of work.

The Multan and the Dera Ghazi Khan rug an exception.

68. Of the bulk of the carpet weaving in the province then it must be said that its chief defect lies in its want of originality, its lack of any national or local feeling. There is of course much, and about the year 1900, when the carpet boom was at its height, there was more, bad workmanship expended on bad materials. But the defect above pointed out is one that pervades the best, as well as the worst work of the province. It is only in Multan and in the Dera Ghazi Khan District that there exists anything like individual or local treatment. The Dera Ghazi Khan rug, which belongs really to the kind of fabrics known as 'khilims,' is woven in stripes, with designs between them, and it is interesting to notice that the patterns employed were by local tradition orginally copied from the robes of the Pharoahs of Egypt. The Multan industry while, as it has been pointed out, it is probably not an indigenous one, has yet developed along distinctive lines. "The patterns," says Mr. P. Brown, in a note contributed by him to the Multan gazetteer, "have a decidedly Tartar air. They are excessively bold and yet not clear in detail. The unusual size of the stitch together with a peculiar brightness in the white and their rather violent red and yellow give them a somewhat aggressive and quite distinctive quality of colour ..... The cotton rugs and carpets are sometimes particoloured like the woollen ones, but the typical Multan cotton carpet is an exceedingly strong and substantial fabric coloured entirely in a bright bluish white and blue. There would seem indeed to be a sort of unity in local treatment of pottery, enamels and rugs." The designs are generally geometrical, the octagon and decagon being favourite forms and also the chess board, but animal figures, lions, dogs, peacocks are also used. "One common feature of all patterns," says the Multan report, "is two or three rectangles concentric with the carpet and near to its borders. The intervening spaces are patterned with small regular figures and the ground filled up with animal or other designs." While however the Multan carpet is interesting as having developed and preserved a distinct local type it is not, I am led to believe, of any great artistic merit. The introduction of aniline dyes has had a bad effect, for the colours used are neither permanent nor good in tone. The market is mainly local and cheapness is the end chiefly held in view, so that much artistic improvement can hardly be expected. The carpet is however substantial, "although" (I quote again from the Multan gazetteer) "the original motif of the pattern has been merged by dint of many repetitions in vague masses of colour, its fabric remains stout and good; forming in this respect a strong contrast with the Mirzapur rug, another survival which has not only lost its pattern but become flimsy and loose in workmanship."

The virtues of the Punjab carpet. The tendency to decry modern weaving.

69. These then are the virtues of the Punjab carpet. If it is not an original masterpiece it is often a very respectable copy, and if it is not a work of art it can at least be an honest and durable piece of merchandise. Sometimes, it must be confessed, it is not even that. But while recognising the defects of the modern carpet at least let us not forget such good features as it possesses. It is the more necessary to insist on this because there has been a tendency among certain writers on the subject to lament the decadence of the industry, a decadence attributed by them in a great degree to the intervention of the commercial spirit and to the competition of the Jails. I am aware that in referring to this assumption I am approaching a controversial topic which it might perhaps be well to avoid. I feel however that it is necessary to touch

on it, first because the Punjab is closely concerned with it, Lahore having been one of the chief seats of the Jail manufacture and Amritsar of the alleged triumph of commerce over art, and secondly because the allegations made, though they were answered by Mr. J. L. Kipling in 1883, and by Sir George Watt in 1903, have been repeated since. Moreover when the charges have been made by writers of such recognised authority as Sir George Birdwood and Mr. Vincent Robinson it would seem certainly worth while to consider how far they have any truth in respect of this province.

The harm alleged to have been done by the Jail industry and European influence.

70. As I have indicated above the position taken by certain writers is that there existed a fine native industry until it was killed by Government interference or at any rate received a serious shock, from which the introduction of aniline dyes and the intervention of the modern commercial spirit prevented its recovering in any satisfactory form. 'Disastrous competition of Government jails,' 'crowding out of the native weaver,' 'the decline and extinction of Indian art carpets, an art centuries old, but which had perished under his very gaze', these are some of the phrases we meet with in this connection. Mr. J. K. Momford in his work on oriental rugs published in 1901 is one of the later exponents of this view, and as illustrative of it, is perhaps worth quoting in full. "It is almost inexplicable," he says speaking of carpet weaving in India, "that a system so strongly grounded, so literally and figuratively inwoven in the family and civil life of the people could in so brief a time have been destroyed, but such seems to have been the case. The apparent first cause was the desire of the Indian Government to furnish occupation for its prisoners in Jails throughout the empire, and incidentally to neutralise the expense of maintaining the corrective system. Brought thus into competition with prison labour the caste weaver was undersold and had no resource save to cheapen his product and increase its volume. The jail manufacture was at first looked upon as a splendid invention, since the singular aptitude of the prisoners enabled them to master the weaving readily, and where they were herded together their work could be overseen and orders enforced. Originality of design was discontinued, forbidden, and chemical dyes were introduced."

Effect of introduction of carpet weaving into the jails. Lack of local treatment a defect of ancient as of modern Punjab carpets.

71. Sir George Watt has pointed out in reply to this passage that carpet weaving in India was introduced by the Muhammadans, that caste had nothing to say to it, and that there is nothing to show that carpet weaving was ever so large and widespread an industry as at the present day. As Mr. J. L. Kipling had pointed out as early as 1883, "it was not until the exhibition of 1862 that the Punjab was known beyond its borders for the production of carpets, and then only by the productions of the Lahore Jail executed for a London firm. There exist no specimens to show that the Multan industry the only indigenous one in the province was of either commercial or artistic importance," therein joining issue with Mr. Vincent Robinson, who says that "the carpets, like the pottery of Multan, were of great interest until the interference of Government with this industry." As I have attempted to show in the introductory paragraphs of this paper the industry was of small importance when first the jails devoted any attention to it, and the facts would seem amply to justify Mr. Kipling in his statement that whereas 'It has been said that the Punjab jails have injured the indigenous industry of carpet weaving it would be more like the truth to assert that they have created such as exists'; and an interesting commentary on the assertion is provided by the fact that the beginnings of the success of the most prominent of the Amritsar firms synchronise with its obtaining the services of a retired Deputy Superintendent from the Lahore Jail to direct its operations. In any case in the desire to decry the work of the present day there is a tendency unduly to exalt the earlier Punjab industry. What I have indicated as the prevailing defect of the modern work, the lack of individuality and local treatment, has always marked Punjab carpets as such. Of the historic Lahore carpets the inspiration was Persian, the work people were almost certainly foreigners, and the designs came from beyond the mountains. The designs were commonly the Herati, or fish pattern as it has been called, so that Lahori and Herati became synonomous terms in respect of Indian carpet design, and doubt has been expressed as to whether the so-called Lahore carpets were not manufactured across the frontier. Local treatment in so far as it can be proved

to have existed at all continues to exist in Multan and the Dera Ghazi Khan district. If therefore the allegation that jail competition has killed independent effort be held to be entirely baseless, the imputation that it has destroyed originality of treatment must be held to be equally so, and it must further be admitted that jail products have afforded a good example in being of good materials, of vegetable if not of fast dyes, and of designs which in the main are copies of suitable Persian patterns. The allegation that the jails have had anything to do with the introduction of aniline dyes is I believe absolutely without foundation.

Evil influence of the commercial spirit probably exaggerated.

72. It seems probable also that over much stress has been placed on the influence of the modern commercial spirit to account for the alleged deterioration of workmanship. The force of the contention rests largely on an exaggerated estimate of the value of the work done before the attention of Europe and America was directed to Indian carpets, for if the work has not seriously declined there is no need to invoke the influence of the commercial spirit to explain it. No doubt the introduction of aniline dyes has had a bad effect. The best vegetable dyes when used with the necessary skill are delicate in tone and permanent in colour, while mineral dyes are apt to be both glaring and evanescent. At the same time it should be remembered that many of the vegetable dyes are just as fleeting as aniline ones, and that, as experience in the jails has shown, all are apt to fade unless applied with great skill. Moreover the introduction of aniline dyes has largely increased the range of tints at the disposal of the dyer. But however severely these dyes are condemned, the case of Multan would seem to show that the use of them is not wholly due to the artistic sense having been overborne by the desire of gain or by economic necessities. It is in Multan that mineral dyes are principally used in the province, and Multan is the city of all others whose industry has least been effected by European influence. The trade is, and always was, in the main a local or at any rate a provincial one. The inference would seem to be that the dyers of pre-exhibition days used vegetable dyes, not so much because of any pride in their work or love of it, as because they had no others, and that their use of mineral dyes to-day is as much due to a love of garish colours as to the desire to lower prices and increase their output.

The harm done by competition.

73. While protesting against an exaggerated estimate of the harm done by competition and trade the writer does not overlook what have been the bad effects of the commercial influence. In Amritsar they have been very marked. The trade figures for the province (and the province in the matter of export trade means practically Amritsar) for the period from the year 1897 up to last year illustrate very strikingly both the offence and its punishment. The demand was found to be large, manufacturers rushed into the industry, competition became extraordinarily keen, and output, not workmanship became the one aim of most, if not of all. The trade rose from over three lakhs in 1897-98 to over eight lakhs in 1899-1900. In the two succeeding years the trade increased: it is impossible, however, as I have pointed out in para. 21, accurately to compare the figures for those years with those of the years succeeding and preceding them, for the totals for the years 1900-1902 necessarily include, for want of detail in the reports, amounts excluded from the figures for other years. This rapid increase of output meant a great volume of bad workmanship expended on inferior materials. Such a condition of things could not last, and the 'boom,' for such a purely commercial term is the only one fitly to describe it, came to an end in the year 1902. Since then the figures have steadily declined, they stood for the year 1904-05, just over 5 lakhs. It is reasonable to suppose that the 'slump' in the trade (to continue a commercial nomenclature) was partly due to the fact that bad workmanship had been found out, though the number of Mirzapur carpets sold in England to-day would seem to show that England at any rate loves bad workmanship. In any case the desire for bad workmanship from Amritsar seems to have disappeared, the weaker factories have gone to the wall, and the demand, now principally in America, seems to be for sound work. The eager assertions of the Amritsar firms that they use only good materials and pure vegetable dyes may at any rate be taken as indicating the tastes of their customers.

74. As far as the export trade then is concerned the crisis seems to have passed, and it may be hoped that the industry is secure for some years at least. In fact, as has been shown, several of the firms are expanding by opening branch factories, though this represents to some extent not so much a real expansion as the desire to find cheaper labour. In taste the work has probably improved during the past few years, and it is certainly not worse in this respect than when the weaving of carpets of Persian design was revived by the jails. The internal trade of the province has been almost stationary since the time when first it was separately recorded, and the evidence which would suggest that the carpets made for a local market have seriously deteriorated either in quality or taste is probably, as far as the Punjab is concerned, of little weight. It must be admitted, however, that the introduction of aniline dyes has been an evil, though perhaps not an unmixed one.

Prospects.

75. Meanwhile if we frankly recognise the trade for what it is, there seems to be no ground for sentimental lamentation, still less for denunciation. The era of great productions has gone by, because the circumstances that made them possible have gone too. In the Punjab, as in Persia, that era was an era of patronage, and when it passed, the industry it had fostered dwindled to insignificant proportions. The jails have given it fresh vitality under a modern form, with the public instead of a patron to support it, and we should rather be thankful to have it in any guise, than complain that it has not been revived in a form which from the nature of things was impossible. Its future as an art industry rests mainly in the hands of the public. The Government of India was asked some years ago to intervene to prevent the use of aniline dyes, and the Government of the United States of America has interfered by prohibiting the import of jail made carpets. In point of fact it is not such intervention that is desirable. Any action by Government should be an extension of that already taken in this country, the foundation of schools of art and the careful supervision of the industry in the jails. In this way it is possible to ensure that at least somewhere in the country good materials shall be woven into suitable designs. If, after all, the public will not have them, Government can do nothing beyond.

APPENDICES.

APPEN

STATEMENT SHOWING EXPORTS OF

Exported to	From Delhi City.	From the rest of Cis-Sutlej territory.	From territory between Sutlej and Jhelum.	Total quantity.	Value.	From Delhi City.	From the rest of Cis-Sutlej territory.	From territory between Sutlej and Jhelum.	Total quantity.	Value.
	Mds.	Mds.	Mds.	Mds.	Rs.	Mds.	Mds.	Mds.	Mds.	Rs.
	1897-1898.					1898-1899.				
British Provinces (excluding Chief Sea-Port towns).										
Bombay	...	1	1	2	450	...	...	12	12	2,724
Madras	...	...	...	...	...	...	...	...	...	...
Sind	...	...	8	8	1,800	...	1	18	19	4,313
Bengal	...	...	...	...	...	...	...	...	...	...
United Provinces of Agra & Oudh	7	46	2	55	12,375	2	43	6	51	11,577
Central Provinces	...	...	...	...	...	...	...	...	...	...
Assám	...	...	...	9*	2,025	...	...	...	...	...
Total ...	7	47	11	74	16,650	2	44	36	82	18,614
Native States.										
Rájpútána and Central India	87	48	30	165	37,125	27	35	47	109	24,743
Nizám's Dominions	...	3	...	3	675	...	...	...	...	...
Mysore	...	1	...	1	225	...	1	...	1	227
Total ...	87	52	30	169	38,025	27	36	47	110	24,970
Chief Sea-Port Towns.										
Madras	...	2	...	2	450	...	...	...	...	...
Bombay	1	17	1,008	1,026	2,30,850	7	...	2,111	2,118	4,80,786
Karáchi	...	...	4	4	900	...	1	18	19	4,313
Calcutta	...	11	93	104	23,400	5	42	205	252	57,204
Total ...	1	30	1,105	1,136	2,55,600	12	43	2,334	2,389	5,42,303
Total Carpets and Rugs ...	95	129	1,146	1,379	3,10,275	41	123	2,417	2,581	5,85,887
	1901-1902.					1902-1903.				
British Provinces (excluding Chief Sea-Port towns).										
Bombay	...	...	...	...		...	...	...	...	...
Madras	...	...	...	1	183	...	...	...	...	...
Sindh	...	...	...	83	15,189	...	...	86	86	15,738
Bengal	...	...	...	4	732	...	...	...	...	...
United Provinces of Agra & Oudh	...	...	...	1,303	2,38,449	9	2	166	177	32,391
Central Provinces	...	...	...	2	366	...	...	...	...	...
Assám	...	...	...	...	...	...	...	...	...	...
Total	...	...	...	1,393	2,54,919	9	2	252	263	48,129
Native States.										
Rájpútána and Central India ...	...	...	...	1	183	...	...	...	...	...
Nizám's dominions	...	...	...	...	...	...	...	...	...	...
Mysore	...	...	...	...	...	...	...	...	...	...
Total ...	...	...	...	1	183	...	...	...	...	...
Chief Sea-Port Towns.						†13	†21	†47	†81	†14,823
Madras	...	...	...	4	732	...	...	...	...	...
Bombay	...	...	...	3,837	7,02,171	3	7	3,372	3,382	6,18,906
Karáchi	...	...	...	198	36,234	...	...	...	...	...
Calcutta	...	...	...	237	43,371	...	...	...	...	...
Total ...	...	...	...	4,276	7,82,508	3	7	3,372	3,382	6,18,906
Total Carpets and Rugs ...	...	...	...	5,670	10,37,610	25	30	3,671	3,726	6,81,858

Note.—Detail by block is not given in the

* Details by block not available.

DIX A.

CARPETS AND RUGS FROM THE PUNJAB.

From Delhi City.	From the rest of Cis-Sutlej territory.	From territory between Sutlej and Jhelum.	Total quantity.	Value.	From Delhi City.	From the rest of Cis-Sutlej territory.	From territory between Sutlej and Jhelum.	Total quantity.	Value.
Mds.	Mds.	Mds.	Mds.	Rs.	Mds.	Mds.	Mds.	Mds.	Rs.
1899-1900.					**1900-1901.**				
2	46	11	59	13,725	...	...	...	22	3,993
...	...	...	...	...	...	...	...	1	181
...	...	47	47	10,933	...	...	...	33	5,989
...	...	...	...	...	...	...	...	4	726
...	12	3	15	3,490	...	...	...	34	6,171
...	...	...	...	...	...	...	...	1	181
...	...	...	*19	4,420	...	...	...	...	...
2	58	61	140	32,568	...	...	...	95	17,241
11	2	85	98	22,797	...	...	...	18	3,267
...	...	2	2	465	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...
11	2	87	100	23,262	...	...	...	18	3,267
...	...	2	2	465	...	...	...	1	181
97	...	3,023	3,120	7,25,774	...	...	...	4,273	7,75,549
...	...	80	80	18,610	...	...	...	902	1,63,713
9	7	225	241	56,761	...	...	...	223	40,474
106	7	3,330	3,443	8,00,910	...	...	...	5,399	9,79,917
119	67	3,478	3,683	8,56,740	...	...	...	5,512	10,00,425
1903-1904.					**1904-1905.**				
4†	18†	58†	80†	14,640	1†	2†	8†	11†	2,013
...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	4	...	69	73	13,359
...	...	...	...	...	...	...	...	...	...
3	392	20	415	75,945	66	8	7	81	14,823
...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...
7	410	78	495	90,585	71	10	84	165	30,195
...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...
...	12	2,552	2,564	4,69,212	4	1	1,972	1,977	3,61,791
...	3	25	28	5,124	2	...	528	530	96 990
...	4	11	15	2,745	5	...	77	82	15,006
...	19	2,588	2,607	4,77,081	11	1	2,577	2,589	4,73,787
7	429	2,666	3,102	5,67,666	82	11	2,661	2,754	5,03,982

nternal Trade Reports of the Punjab for the year 1900-02.

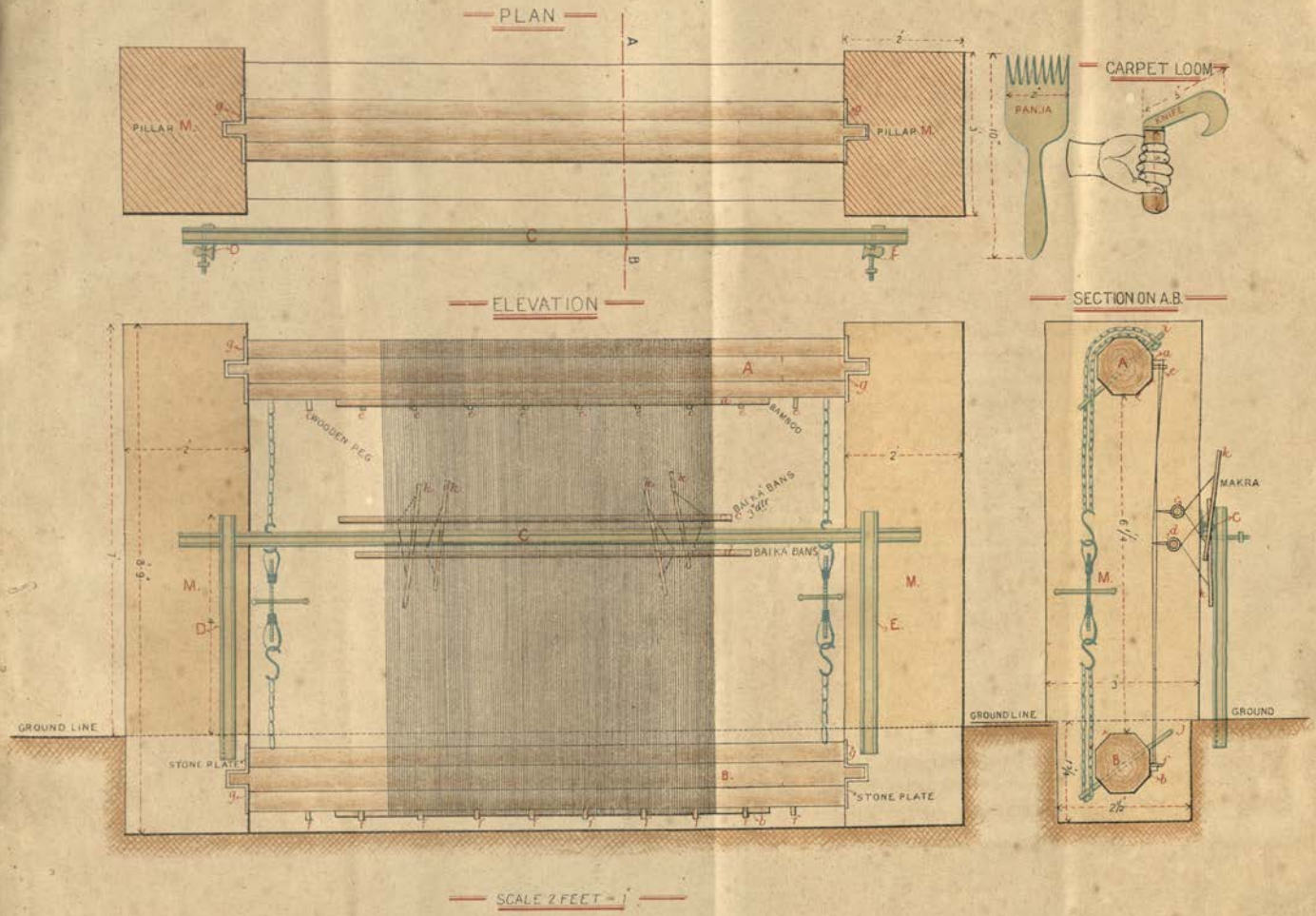
† Names of places to which these have been exported are not given in Internal Trade Reports of the Punjab for 1902-05.

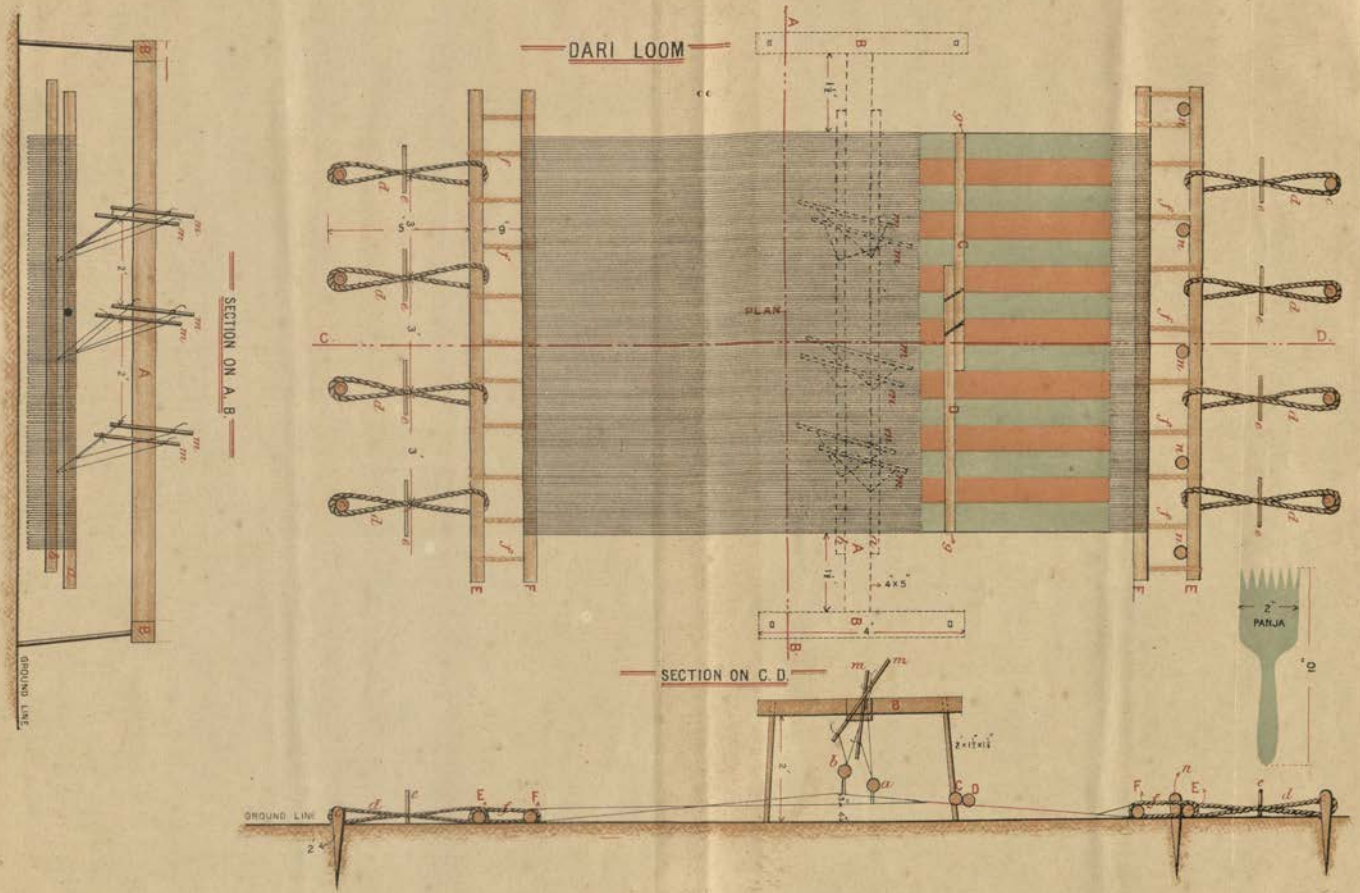
APPENDIX B.

STATEMENT SHOWING INTERNAL TRADE OF CARPETS AND RUGS IN THE PUNJAB.

Whence exported.	Imported into.								Imported into.							
	Delhi City.	The rest of Cis-Sutlej territory.	Territory between Sutlej and Jhelum.	Territory between Jhelum and Indus.	Peshawar and Kohat.	Trans-Indus portion.	Total quantity.	Value.	Delhi City.	The rest of Cis-Sutlej territory.	Territory between Sutlej and Jhelum.	Territory between Jhelum and Indus.	Peshawar and Kohat.	Trans-Indus portion.	Total quantity.	Value.
	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Rs.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Mds.	Rs.
	1897-1898.								1898-1899.							
Delhi City	...	51	...	...	...	..	51	12,475	...	65	...	...	...	...	65	14,755
The rest of Cis-Sutlej Territory.	35	...	7	1	...	...	43	9,675	5	...	...	2	...	...	7	1,589
Territory between Sutlej and Jhelum.	1	243	...	...	...	...	244	54,900	...	198	...	11	2	...	211	47,897
Territory between Jhelum and Indus.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peshawar and Kohat ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other blocks	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	36	294	7	1	...	...	338	77,050	5	263	...	13	2	...	283	64,241
	1899-1900.								1900-1901.*							
Delhi City	...	52	...	...	...	...	52	12,096	...	...	...	...	...	...	...	...
The rest of Cis-Sutlej Territory.	20	...	24	27	34	...	105	24,426	...	...	...	...	...	...	...	...
Territory between Sutlej and Jhelum.	...	126	...	12	28	...	166	38,616	...	...	...	...	...	...	...	...
Other blocks	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	20	178	24	39	62	...	323	75,138	...	...	...	...	...	...	...	...
	1901-1902.*								1902-1903.							
Delhi City	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
The rest of Cis-Sutlej Territory.	...	...	...	...	...	...	...	...	5	...	157	5	46	...	213	38,979
Territory between Sutlej and Jhelum.	...		...	...	...	...	...	...	44	70	...	43	58	2	217	39,711
Other blocks	...	...	...	...	...	...	...	...	...	33	18	...	...	...	51	9,333
Total ...	...	...	...	...	...	...	...	...	49	103	175	48	104	2	481	88,023
	1903-1904.								1904-1905.							
Delhi City	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
The rest of Cis-Sutlej Territory.	26	...	34	5	25	...	90	16,470	...	...	54	4	11	1	70	12,810
Territory between Sutlej and Jhelum.	207	86	...	38	48	..	449	82,167	22	120	..	112	59	1	314	57,462
Other blocks	4	31	14	34	1	...	84	15,372	...	13	4	...	1	...	18	3,294
Total ...	237	117	48	77	144	...	623	1,14,009	22	133	58	116	71	2	402	75,566

* No Figures.


PLAN
PILLAR M.
PILLAR M.
A
B
C
D
E
F
CARPET LOOM
PANJA
KNIFE
ELEVATION
WOODEN PEG
BAMBOO
BAIKA BANS
BAIKA BANS
M.
M.
D
E
A
B.
GROUND LINE
STONE PLATE
STONE PLATE
SECTION ON A.B.
MAKRA
GROUND LINE
GROUND
SCALE 2 FEET = 1



The drawing of a loom above was made from a loom in the Delhi Jail. It differs from the typical Punjab loom in that its posts are of brick like those at Multan instead of being of wood as described in the text. For the "ghori", metal rails have been used instead of wood, the substance ordinarily employed.

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